

Figure 1

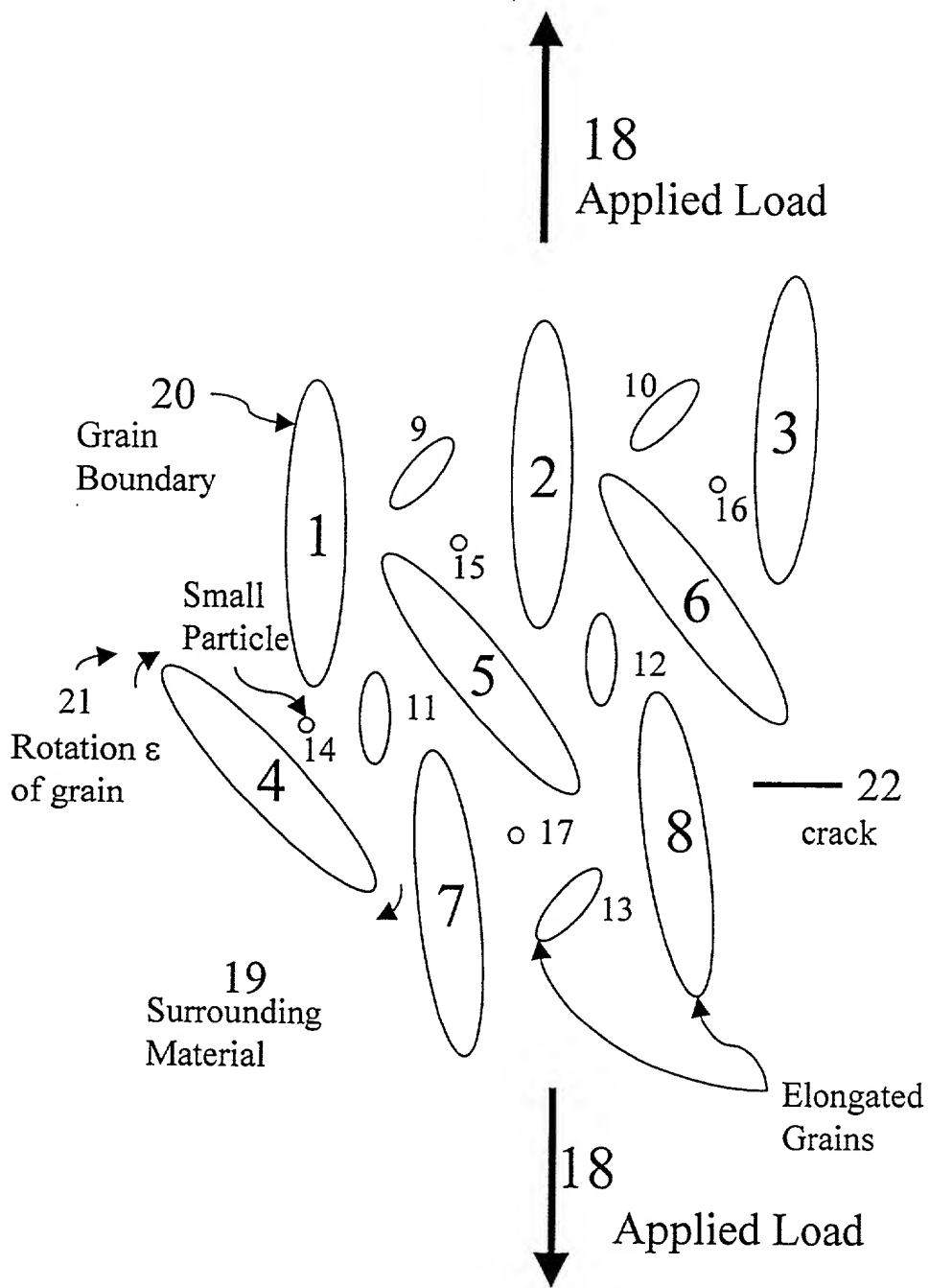
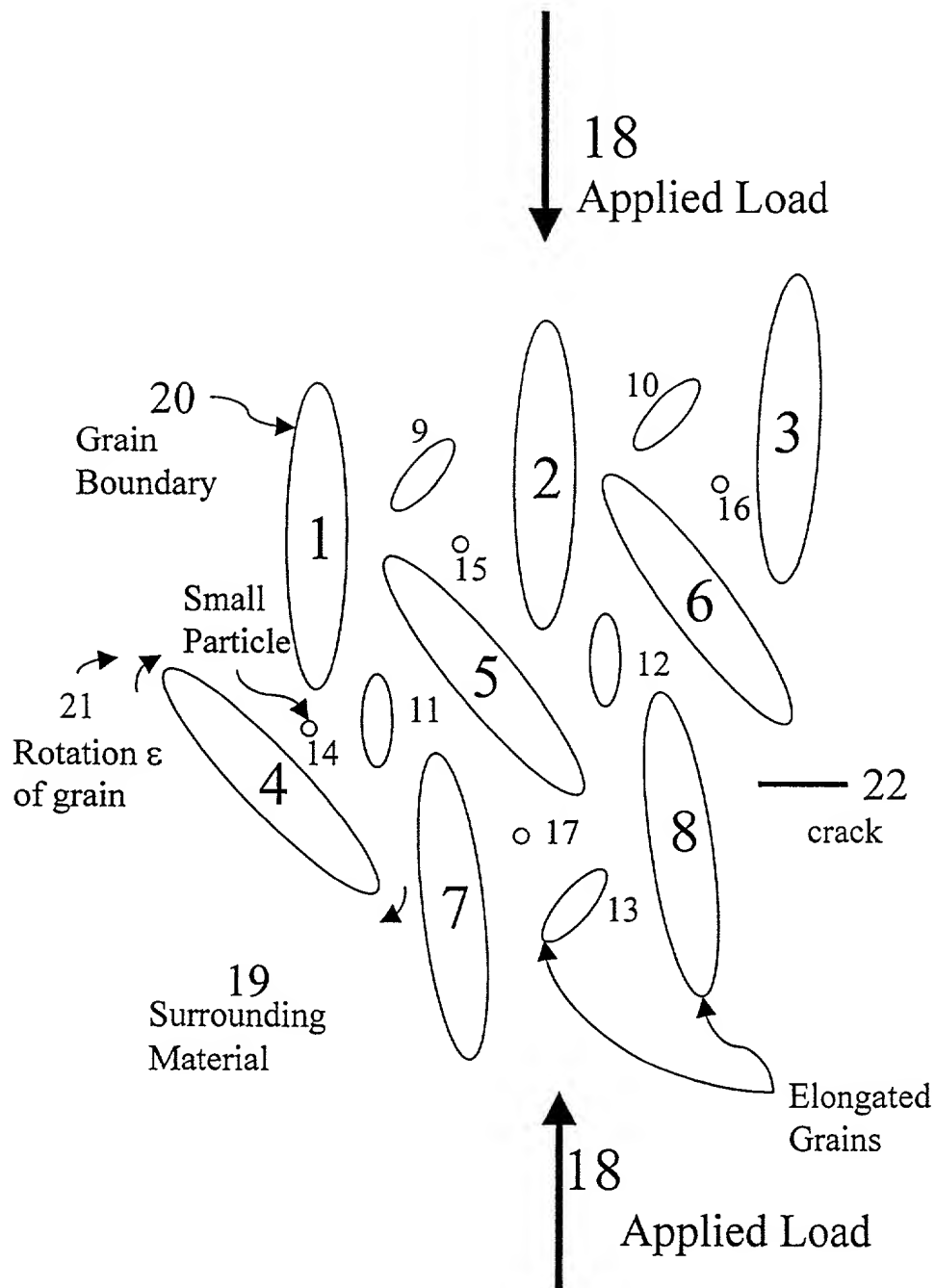


Figure 2



UNITED STATES PATENT AND TRADEMARK OFFICE
DOCUMENT CLASSIFICATION BARCODE SHEET



Oath/Declaration, Small Entity, and Power of Attorney

8

**COMBINED DECLARATION AND POWER OF ATTORNEY
FOR UTILITY PATENT APPLICATION (Includes PCT)**
**Attorney Docket No.
66377-004-4**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; that

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

MICROSTRUCTURE CONTAINING ENTITIES ROTATING UNDER AN APPLIED LOAD TO ENHANCE TOUGHENING AGAINST FRACTURE

the specification of which (check one): ☒ is attached hereto.

☐ was filed on _____ as Application Serial No. _____ and was amended on _____.

☐ was filed as PCT international application no. _____ and was amended under PCT Article 19 on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I do not know and do not believe the claimed invention was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application.

I hereby claim foreign priority benefits under Title 35, United States Code §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

(Number) _____	(Country) _____	Day/Month/Year Filed _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(Number) _____	(Country) _____	Day/Month/Year Filed _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(Number) _____	(Country) _____	Day/Month/Year Filed _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119 (e) of any United States provisional application(s) listed below:

Application No. _____ Filed _____	Day/Month/Year Filed _____	Application No. _____	Day/Month/Year _____
--------------------------------------	----------------------------	-----------------------	----------------------

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Attorney Docket No. 66377-004-409/164,363
Application Serial No.October 1, 1998
Filing DatePending
Status (patented, pending, abandoned)

Application Serial No.

Filing Date

Status (patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Lawrence R. Radanovic, Reg. No. 23,077; Richard H. Tushin, Reg. No. 27,297; Donald N. Huff, Reg. No. 27,561; John P. DeLuca, Reg. No. 25,505; Charles R. Rutherford, Reg. No. 18,933; Robert L. Kelly, Reg. No. 31,843; Ernest E. Helms, Reg. No. 29,721; Sandra S. Snapp, Reg. No. 41, 444, William F. Kolakowski, Reg. No. 41,908 and William A. Bonk III, Reg. No. 40,521, of Dykema Gossett PLLC. Direct all telephone calls to telephone no. (202) 522-8600 and faxes to (202) 522-8669.

Address all correspondence to **Dykema Gossett PLLC, Franklin Square, 1300 I Street, N.W., Suite 300 West, Washington, D.C. 20005-3306.**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First Joint Inventor	Inventor's Signature	Date
Christine M. KENNEFICK	<i>Christine M. Kennefick</i>	2 August 2001
Residence: 2029 Turtle Pond Drive, Reston, VA 20191		Citizenship USA
Post Office Address: Same as Above		

**COMBINED DECLARATION AND POWER OF ATTORNEY
FOR UTILITY PATENT APPLICATION (Includes PCT)**

**Attorney Docket No.
8271/71396-2**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; that

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

COMPOSITE MATERIAL HAVING A MICROSTRUCTURE MODEL

the specification of which (check one): ☒ is attached hereto.

☐ was filed on _____ as Application Serial No. _____ and was amended on _____.

☐ was filed as PCT international application no. _____ on _____, and was amended under PCT Article 19 on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I do not know and do not believe the claimed invention was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application.

I hereby claim foreign priority benefits under Title 35, United States Code §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

_____ (Number)	_____ (Country)	_____ Day/Month/Year Filed	<input type="checkbox"/>	<input type="checkbox"/>	
			Yes	No	

_____ (Number)	_____ (Country)	_____ Day/Month/Year Filed	<input type="checkbox"/>	<input type="checkbox"/>	
			Yes	No	

_____ (Number)	_____ (Country)	_____ Day/Month/Year Filed	<input type="checkbox"/>	<input type="checkbox"/>	
			Yes	No	

I hereby claim the benefit under Title 35, United States Code, §119 (e) of any United States provisional application(s) listed below:

_____ Application No.	_____ Day/Month/Year Filed	_____ Application No.	_____ Day/Month/Year Filed
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

08/805,466
Application Serial No.Feb. 25, 1997
Filing DatePending
Status (patented, pending, abandoned)

Application Serial No.

Filing Date

Status (patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith; Watson Cole Grindle Watson, P.L.L.C.; Lawrence R. Radanovic, Reg. No. 23,077; Richard H. Tushin, Reg. No. 27,297; Donald N. Huff, Reg. No. 27,561; John P. DeLuca, Reg. No. 25,505; Robert J. Lasker, Reg. No. 22,785; Walter D. Ames, Reg. No. 17,913 and Roy W. Butrum, Reg. No. 18,290. Direct all telephone calls to telephone no. (202) 628-3600 and faxes to (202) 628-3650.

Address all correspondence to **Watson Cole Grindle Watson, P.L.L.C., 10th Floor, 1400 K Street, N.W., Washington, D.C. 20005-2477.**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole, First Inventor Christine M. KENNEFICK	Inventor's Signature <i>Christine M Kennefick</i>	Date <i>25 September 1998</i>
Residence: Dayton OHIO		Citizenship USA
Post Office Address: 4871 Effingham Place, Dayton, OHIO 45431		
Full Name of Second, Joint Inventor	Inventor's Signature	Date
Residence:		Citizenship
Post Office Address:		
Full Name of Third, Joint Inventor	Inventor's Signature	Date
Residence:		Citizenship
Post Office Address:		